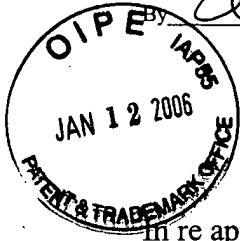


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AF 136822  
PATENT

Attorney Docket No. SIC-02-009-1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

MASAHIRO YAMANAKA

Application No.: 10/676,417

Filed: September 30, 2003

For: BICYCLE CRANK AXLE WITH A  
RADIAL PROJECTION

Examiner: Vinh Luong

Art Unit: 3682

TRANSMITTAL LETTER

Mail Stop Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

Transmitted herewith is an appeal brief for the above-captioned matter. Form PTO-2038 authorizing credit card payment of \$500.00 also is enclosed to cover the appeal brief filing fee pursuant to 37 CFR § 41.20(b)(2).

Respectfully submitted,

James A. Deland  
Reg. No. 31,242

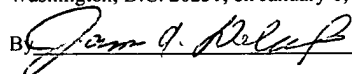
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PATENT

Attorney Docket No. SIC-02-009-1

By





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

MASAHIRO YAMANAKA

Application No.: 10/676,417

Filed: September 30, 2003

For: BICYCLE CRANK AXLE WITH A  
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APPEAL BRIEF

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

This is an appeal brief for the above-captioned matter.

**I. Real Party In Interest**

The assignee and real party in interest is Shimano, Inc., a Japanese corporation having a principal place of business in Osaka, Japan.

**II. Related Appeals And Interferences**

There are no prior or pending appeals, interferences or judicial proceedings known to the appellant, to appellant's legal representative, or to the assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

### **III. Status Of Claims**

Claims 35, 36 and 38-56 are pending under final rejection and are under appeal. Claims 1-34 have been canceled, and claim 37 is considered allowable if rewritten in independent form including all of the limitations of the base and intervening claims.

### **IV. Status Of Amendments**

No amendment was filed subsequent to final rejection.

### **V. Summary Of Claimed Subject Matter**

An embodiment of the claimed subject matter is shown in Figs. 2 and 3 and described at paragraph [0030] (page 8, lines 15-30) of the patent application (the first line of paragraph [0030] is considered to be line 15). As applied to that embodiment, the claimed subject matter is directed to a bicycle crank axle (59) adapted to be rotatably supported within a bottom bracket (33) of a bicycle frame, wherein the crank axle comprises an axle body (348) having a first portion (350) and a second end portion (354) (page 8, lines 15-16). A portion of the axle body (348) forms a projection (366) extending radially outwardly from one of the first and second end portions of the axle body (e.g., from first portion (350)). The projection (366) is dimensioned and positioned to be located externally of the bottom bracket (33) as shown in Fig. 2 so as to abut against a laterally outer side surface of a bicycle crank arm (60A) to prevent the bicycle crank arm (60A) from moving axially outwardly. See also page 8, lines 19-21. The axle body (348) is dimensioned so that the crank arm (60A) that abuts against the projection (366) is mounted to the projection (366) by passing the other one of the first and second end portions of the axle body (i.e., portion 354) through the crank arm (60A) and passing the axle body (348) through the crank arm (60A) until the crank arm (60A) is mounted to the projection (366) as described at page 8, lines 26-30.

### **VI. Grounds Of Rejection To Be Reviewed On Appeal**

Claims 35, 36 and 38-45 stand rejected under 35 U.S.C. §102(b) as being anticipated by Ernest (GB 356,497).

Claims 46-56 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ernest in view of Yamanaka (US 5,845,543).

## **VII. Arguments**

### **Rejection under 35 U.S.C. §102(b) over Ernest**

#### **Claims 35, 36 and 38-45.**

Ernest discloses in Figs. 1 and 3 a bicycle crank assembly that includes a generally cylindrical crank axle (1). One end (3) of axle (1) is fitted within a collar (5) which, in turn, is fitted within a crank arm (13). The opposite end of axle (3) includes flats (15) and axially extending projections (16), wherein flats (15) allow that end of axle (1) to be inserted into an oval-shaped opening (18) in a crank arm (17). After axle (1) is inserted into opening (18) in crank arm (17), the projections (16) are inserted through a corresponding pair of openings (81) in a washer (80) and bent radially outwardly to fasten crank arm (17) to axle (1).

Independent claim 35 recites a projection extending radially outwardly from one of the first and second end portions of the axle body, wherein the axle body is dimensioned so that the crank arm that abuts against the projection is mounted to the projection by passing the other one of the first and second end portions of the axle body through the crank arm and passing the axle body through the crank arm until the crank arm is mounted to the projection. The final office action dated July 15, 2005 states at page 3 that the end (3) of Ernest's axle body (1) is capable of being passed through crank arm (17), continuing until the subsequently formed projections (16) abut against the crank arm (17).

It is respectfully submitted that there is no basis to conclude that even the end (3) of Ernest's axle (1) could be inserted into the opening (18) in crank arm (17) because the flats (4) at end (3) are shallower than the flats (15) that are dimensioned to be inserted into opening (18) in crank arm (17). In any event, there is no way that the cylindrical portions of axle (1) directly to the right of flats (4) could pass through opening (18) in crank arm (17). Accordingly, Ernest neither discloses nor suggests the subject matter recited in claim 35 and the corresponding dependent claims.

**Rejection under 35 U.S.C. §103(a) over Ernest in view of Yamanaka.**

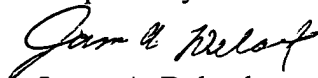
**Claims 46-55.**

It is respectfully submitted that claims 46-55 are patentable for the same reasons noted above.

**Claim 56.**

Claim 56 was purportedly rejected for the same reasons noted for claim 37. However, claim 37 was considered allowable over the prior art. Accordingly, it is respectfully submitted that neither Ernest nor Yamanka discloses or suggests a projection that extends completely around the axle body.

Respectfully submitted,



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**VIII. CLAIMS APPENDIX**

CLAIM 35. A bicycle crank axle adapted to be rotatably supported within a bottom bracket of a bicycle frame, wherein the crank axle comprises:

an axle body having first and second end portions;

wherein a portion of the axle body forms a projection extending radially outwardly from one of the first and second end portions of the axle body, wherein the projection is dimensioned and positioned to be located externally of the bottom bracket so as to abut against a laterally outer side surface of a bicycle crank arm to prevent the bicycle crank arm from moving axially outwardly; and

wherein the axle body is dimensioned so that the crank arm that abuts against the projection is mounted to the projection by passing the other one of the first and second end portions of the axle body through the crank arm and passing the axle body through the crank arm until the crank arm is mounted to the projection.

CLAIM 36. The crank axle according to claim 35 wherein the projection extends circumferentially along the axle body.

CLAIM 37. The crank axle according to claim 36 wherein the projection extends completely around the axle body.

CLAIM 38. The crank axle according to claim 35 further comprising a plurality of splines disposed at the one of the first and second end portions of the axle body.

CLAIM 39. The crank axle according to claim 38 wherein the plurality of splines are disposed axially inwardly of the projection.

CLAIM 40. The crank axle according to claim 39 wherein the plurality of splines are located in close proximity to the projection.

CLAIM 41. The crank axle according to claim 40 wherein the plurality of splines are located directly adjacent to the projection.

CLAIM 42. The crank axle according to claim 40 wherein the plurality of splines extend radially outwardly from an outer peripheral surface of the axle body.

CLAIM 43. The crank axle according to claim 35 further comprising a plurality of splines disposed at the other one of the first and second end portions of the axle body.

CLAIM 44. The crank axle according to claim 43 wherein the plurality of splines do not extend radially outwardly from an outer peripheral surface of the axle body.

CLAIM 45. The crank axle according to claim 44 wherein the plurality of splines do not extend radially outwardly from an outer peripheral surface of the axle body located axially inwardly of the plurality of splines.

CLAIM 46. The crank axle according to claim 35 wherein the other one of the first and second end portions of the axle body includes a threaded opening.

CLAIM 47. The crank axle according to claim 46 further comprising a plurality of splines disposed at the other one of the first and second end portions of the axle body.

CLAIM 48. The crank axle according to claim 47 wherein the plurality of splines do not extend radially outwardly from an outer peripheral surface of the axle body.

CLAIM 49. The crank axle according to claim 48 wherein the plurality of splines do not extend radially outwardly from an outer peripheral surface of the axle body located axially inwardly of the plurality of splines.

CLAIM 50. The crank axle according to claim 46 wherein the projection is disposed at the first end portion of the axle body, and further comprising:

- a plurality of first splines disposed at the first end portion of the axle body; and
- a plurality of second splines disposed at the second end portion of the axle body.

CLAIM 51. The crank axle according to claim 50 wherein the plurality of first splines are disposed axially inwardly of the projection.

CLAIM 52. The crank axle according to claim 51 wherein the plurality of first splines are located in close proximity to the projection.

CLAIM 53. The crank axle according to claim 52 wherein the plurality of second splines do not extend radially outwardly from an outer peripheral surface of the axle body.

CLAIM 54. The crank axle according to claim 53 wherein the plurality of second splines do not extend radially outwardly from an outer peripheral surface of the axle body located axially inwardly of the plurality of second splines.

CLAIM 55. The crank axle according to claim 54 wherein the projection extends circumferentially along the axle body.

CLAIM 56. The crank axle according to claim 55 wherein the projection extends completely around the axle body.



**IX. EVIDENCE APPENDIX**

**None**

**X. RELATED PROCEEDINGS APPENDIX**

None